# *FLABELLIGENA AMOUREUXI* NEW GENUS, NEW SPECIES (POLYCHAETA: ACROCIRRIDAE) FROM CROZET ISLANDS (INDIAN OCEAN)

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ABSTRACT

A new species of Annelida: Polychaeta, *Flabelligena amoureuxi*, family Acrocirridae Banse is described from the Crozet Islands (Indian Ocean). Specimens were collected during the Oceanographic Expedition Marion Dufesne MD/08 BENTHOS in 1974. *Flabelligena amoureuxi* is compared with the other species of the genus *Flabelligena* and the genus *Flabelligera* Hartman, 1965.

After the Marion Dufresne MD/03 BIOMASS Cruise in 1974, a new expedition was undertaken to study the benthic invertebrates from the South West Indian Ocean. Polychaetes collected during the MD/08 BENTHOS Expedition from Marion, Prince Edward and the Crozet Islands were studied by Gillet (1991). A new maldanid, *Axiothella crozetensis*, was described (Gillet, 1989).

## Materials and Methods

A description of the sampling sites of the MD/08 BENTHOS Expedition was provided by Arnaud and Hureau (1979). Different sampling methods were used: Charcot dredge, Okean grab, Lithods nets and trawl. Specimens were conserved in 70% ethanol and observed with light microscopy with an Olympus CHT2 and with a scanning electron microscopy on an Olympus JSM 5200 using the critical point as a drying method.

Material was deposited in the Institut de Recherche Fondamentale et Appliquée, Angers-France with the registration number IRFA ACR001, IRFA ACR003 and IRFA ACR004. A duplicate collection was deposited in the Museum National d'Histoire Naturelle de Paris, France and in the South African Museum, Cape Town, South Africa.

## Family Acrocirridae Banse, 1969

The acrocirrids are Polychaeta sedentaria with frontal palps, a reduced prostomium and generally with eyes. The family Acrocirridae is a small family with three genera: *Acrocirrus* Grube, 1872, *Flabelligella* Hartman, 1965 and *Macrochaeta* Grube, 1850. The type genus is *Acrocirrus* Grube, 1872 it has was chosen because the specimens are usually large enough to allow recognition of all diagnostic characters of the family. The genus *Acrocirrus* Grube, 1872 and *Macrochaeta* Grube, 1850 were removed from the Cirratulidae and placed in the family Acrocirridae by Banse (1969). The scalibregmid body with papillae remains flabelligerids but the pair of cirriform appendages and composite neurochaetae are closely related to cirratulids.

## Genus Flabelligella Hartman, 1965

Type species *Flabelligella papillata* Hartman, 1965: 177, plate 38.

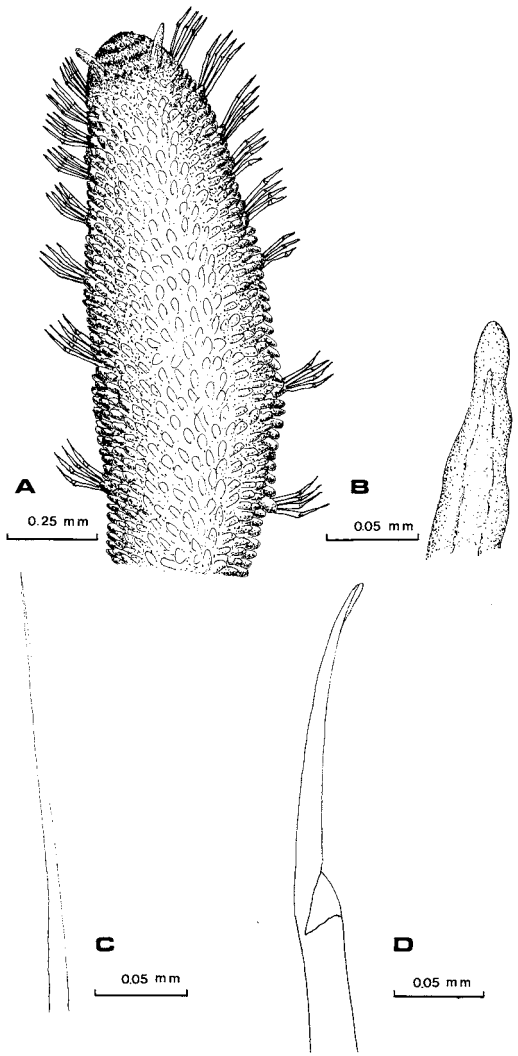


Figure 1. *Flabelligena amoureuxi* n. sp. (Holotype IRFA ACR 001). A, anterior region; B, papilla; C, notochaeta ; D, neurochaeta.

The genus *Flabelligella* has a rounded prostomium without a cephalic cage. Neuropodia have composite falcigerous chaetae and notopodia have simple and cross-barred or spinulose chaetae.

The genus *Flabelligella* Hartman, 1965 was placed in the family Flabelligeridae in relation to the composite neurochaetae as in *Flabelligera*, but without a cephalic cage as in *Brada*. Hartman (1971) transferred the genus to the family Fauveliopsidae Hartman, 1971; then Orensanz (1974) to the family Acrocirridae Banse, 1969.

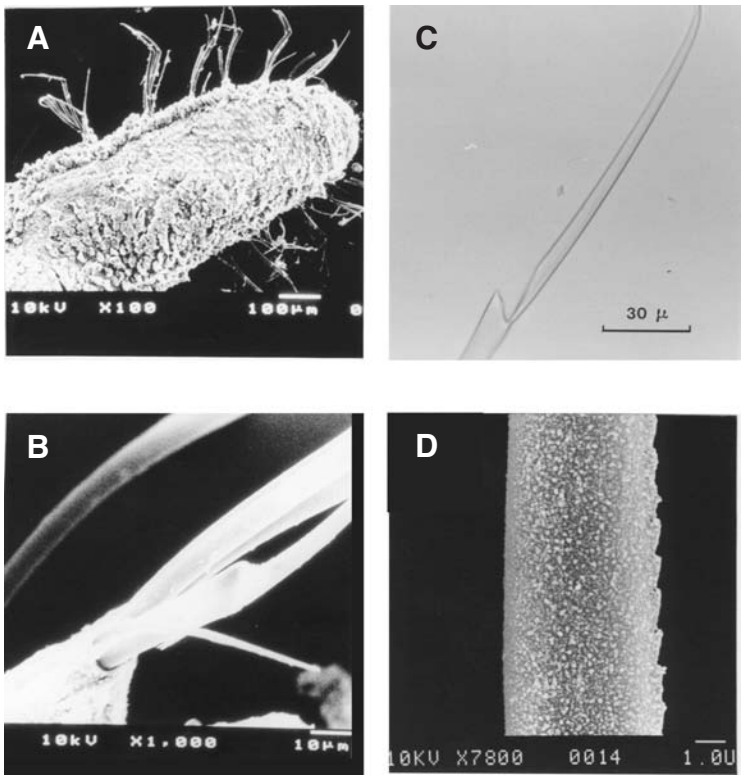


Figure 2. Scanning Electron Micrographies of *Flabelligena amoureuxi* n. sp.: (Paratype) A, anterior region ×100; B, neurochaetae; C, neurochaetae ×1000; D, details of neurochaetae ×7800.

## ***Flabelligena*** new genus

Type species *Flabelligena cirrata* (Hartman and Fauchald, 1971) plate 18, Figs. a–c.

The presence of a pair of palps, first found in the species *F. cirrata* Hartman and Fauchald, 1971 is a cirratulid character which is unknown for any other flabelligerids. These specimens have also spinulose or serrated notochaetae instead of cross-barred notochaetae. In relation to the presence of a pair of palps and to the absence of cross-barred chaetae, the suggestion is to separate the *Flabelligella* species into two different genera: the genus *Flabelligella* with the type species *Flabelligella papillata* Hartman, 1965 and the genus *Flabelligena* with the type species *F. cirrata* (Hartman and Fauchald, 1971).

## ***Flabelligena amoureuxi*** new species
(Figs. 1 A–D; 2 A–D; 3; Table 1)

*Material Examined.*—Holotype: The Crozet Islands 17.04.1976 sta. 60, sampling BB 250, 46°03.4S; 49°47.6E; 27 chaetigers, 7 mm long, 0.5 mm wide. Paratypes: The Crozet

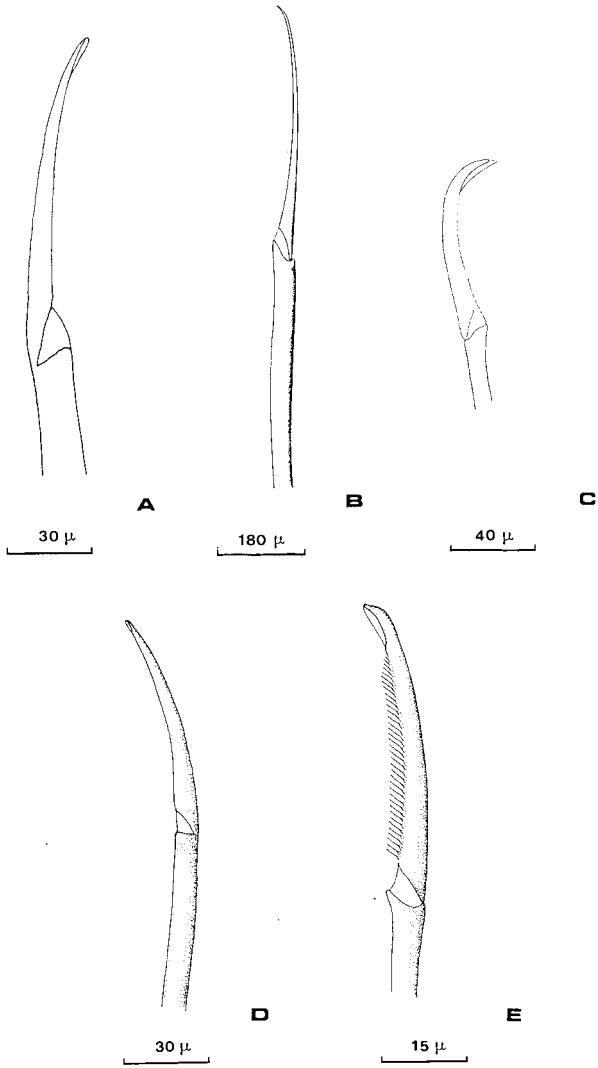


Figure 3. A comparison of types of chaetae in the species of the genus *Flabelligella* Hartman, 1965 and the genus *Flabelligena* gen. nov. A, *F. amoureuxi* n. sp.; B, *F. cirrata* Hartman and Fauchald; C, *F. erratica* Orensanz; D, *F. minuta* Hartman; E, *F. mexicana* Fauchald and *F. papillata* Hartman.

Islands sta. 59 (BB 253) 45°59.8S, 49°58.3E, 2 examples; sta. 60 (BB 250) 46°03.4S, 49°47.6E, 6 examples; sta. 64 (BB 264) 46°02.0S, 49°08.5E, 6 examples. Material deposited at IRFA Museum IRFA Holotype: ACR 001 Paratypes: ACR 003 and ACR 004.

*Description*.—The type has 27 chaetigers, it is 7 mm long and 0.5 mm wide.

The prostomium, eyeless, is smooth and rounded, dark brown at the tip. The peristomium is a smooth ring with a pair of long palps, reaching sometimes the third chaetiger. The cephalic cage is missing (Figs. 1A,2A).

Table 1. A comparison of some characters in existing species of the genus *Flabelligella* Hartman, 1965.

| Species | Type locality depth | Palpi | Chaetigers | Notochaetae | Neurochaetae | Eyes |
|---|---|---|---|---|---|---|
| *F.mexicana* Fauchald (1972) | Cedros Island abyssal | 0 | 9 | cross-barred 2 | composite 7–8 | 0 |
| *F.minuta* Hartman (1965) | New England 400–4825 m | 0 | 10 | cross-barred 1–3 | composite 4–8 | 0 |
| *F.papillata* Hartman (1965) | Bermuda 770–4825 m | 0 | 20 | cross-barred ? | composite 1–2 | 0 |

The body, white in ethanol is covered with epithelial papillae. Epithelial papillae are cylindrical and covered with mud and sand particles. The tip is enlarged (Fig. 1B).

The first four chaetigerous segments are shorter than the following. The next five chaetigers are longer and enlarged. Posterior segments are slenderer and cylindrical. Segmental lines are not visible. Parapodia are reduced without acicula. Simple slender notochaetae are capillary spinulose (Fig. 1C). Neurochaetae are large composite spinigers with a hinged distal end (Figs. 1D,2B,C,D). There are four composite neurochaetae on each side from the first to the fourth chaetigers. The number of the chaetae varies in some chaetigers between 3 to 5 with a single simple notochaetae but no chaetal variations along the body. The posterior end has no modified structure. The pygidium is unknown.

*Discussion*.—*F. amoureuxi* differs from *F. mexicana* Fauchald (1971), *F. minuta* Hartman (1965) and *F. papillata* (Hartman, 1965) by the presence of a pair of palps and by the presence of spinulose notochaetae instead of cross-barred notochaetae. It differs also from *F. erratica* Orensanz (1974) by the absence of eyes and a prostomium which is rounded instead of pentagonal. Neurochaetae are not curved and serrated papillae are long and dense and not small and widely spaced as in *F. cirrata* Hartman and Fauchald (1971). It has only one simple notochaeta and generally 4 composite neurochaetae instead of 4 to 8. In relation to morphology and ecology, this is the first species collected from Subantarctic Islands. Amoureux (1982) found some specimens of *F. papillata* collected during the Thalassa Cruise in the North Atlantic Ocean at a depth from 400 to 2000 m. *F. papillata* was also found along the Chile coast (Hartman, 1967) at a depth from 115 to 4099 m (Tables 1,2).

Table 2. A comparison of some characters in existing species of the genus *Flabelligena* gen. nov.

| Species | Type locality depth | Palpi | Chaetigers | Notochaetae | Neurochaetae | Eyes |
|---|---|---|---|---|---|---|
| *F.amoureuxi* n. sp. | Crozet 215–980 m | 2 | 30 | spinulose 1 | composite 3–5 | 0 |
| *F.cirrata* Hartman & Fauchald (1971) | New England 466–530 m | 2 | 17–24 | serrated 1–2 | composite 4–8 | 0 |
| *F.erratica* Orensanz (1974) | Argentina 288 m | 2 | 20–30 | spinulose 1 | composite 1–3 | 2 |

*Habitat*.—*F. amoureuxi* lives at depths from 215 to 980 m on clay or clay-sand around the Crozet Islands associated with *Paraonis uncinatus*.

*Etymology*.—*F. amoureuxi* is named after Dr. Louis Amoureux, in appreciation of his research on polychaetes. He was a taxonomist at the Université Catholique de l'Ouest, Angers, France.

## Key of the genera *Flabelligella* and *Flabelligena*

1a. A pair of palps present, Spinulose notochaetae ..... genus *Flabelligena*
1b. Palps absent, cross-barred notochaetae ..... genus *Flabelligella*

## Genus *Flabelligena*

1a. One or two serrated notochaetae ..... *F. cirrata*
1b. No serrated notochaetae, but one spinulose ..... 2
2a. A pair of eyes, prostomium pentagonal, 1–3 composite falciger neurochaetae ..... *F. erratica*
2b. Eyes absents, prostomium rounded, 3–5 composite falciger neurochaetae ..... *F. amoureuxi*

## Genus *Flabelligella*

1a. More than 20 chaetigerous segments ..... *F. papillata*
1b. Up to 10 chaetigerous segments ..... 2
2a. Ten chaetigerous segments, 2 cross-barred notochaetae and 7-8 composite falciger neurochaetae ..... *F. mexicana*
2b. Nine chaetigerous segments, 1–3 cross-barred notochaetae and 4–8 composite falciger neurochaetae ..... *F. minuta*

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